412432

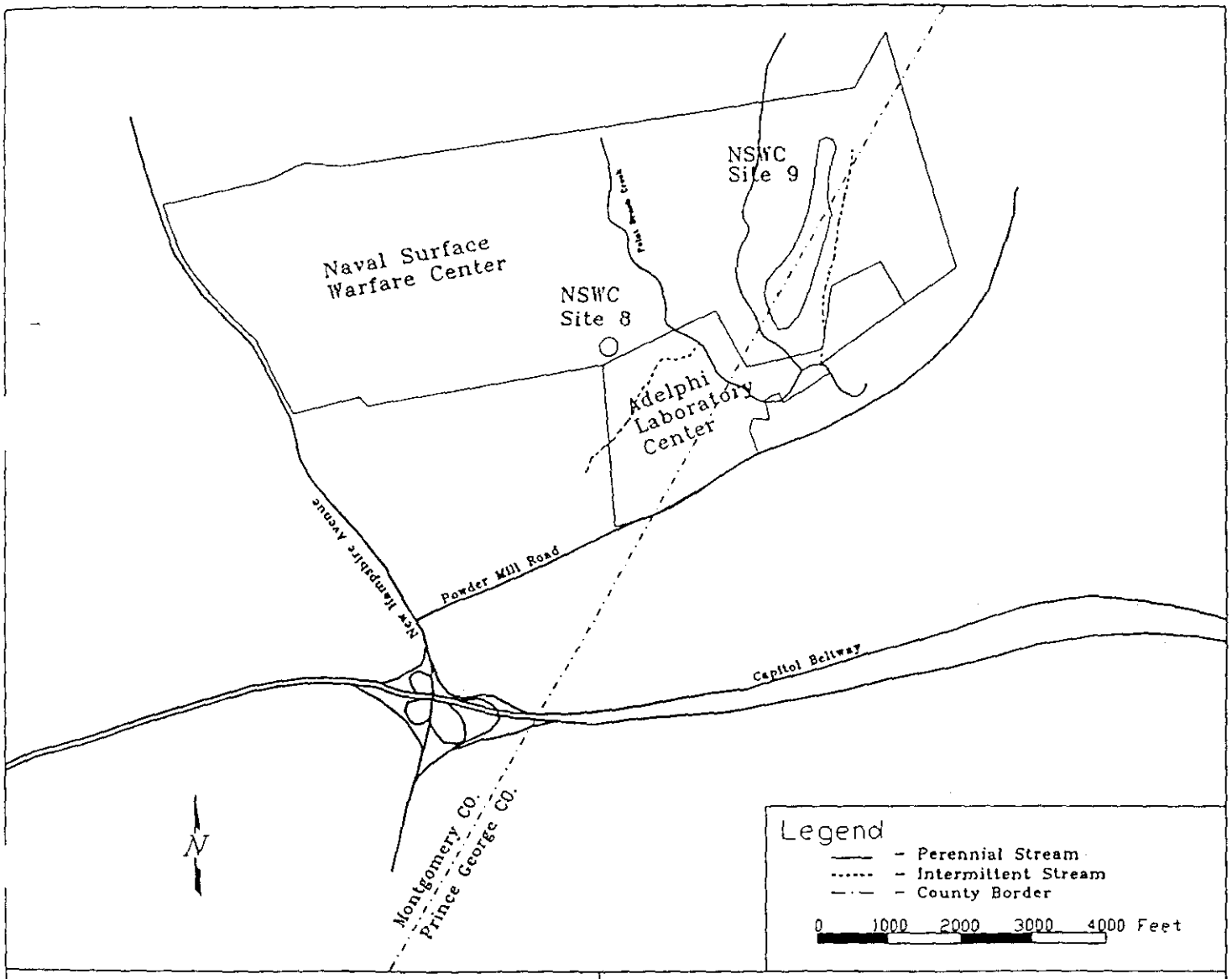
ENVIRONMENTAL CONTAMINATION CONDITION

AT THE

ADELPHI LABORATORY CENTER

ROBERT P. CRAIG
RISK MANAGEMENT DIVISION
ARMY RESEARCH LABORATORY

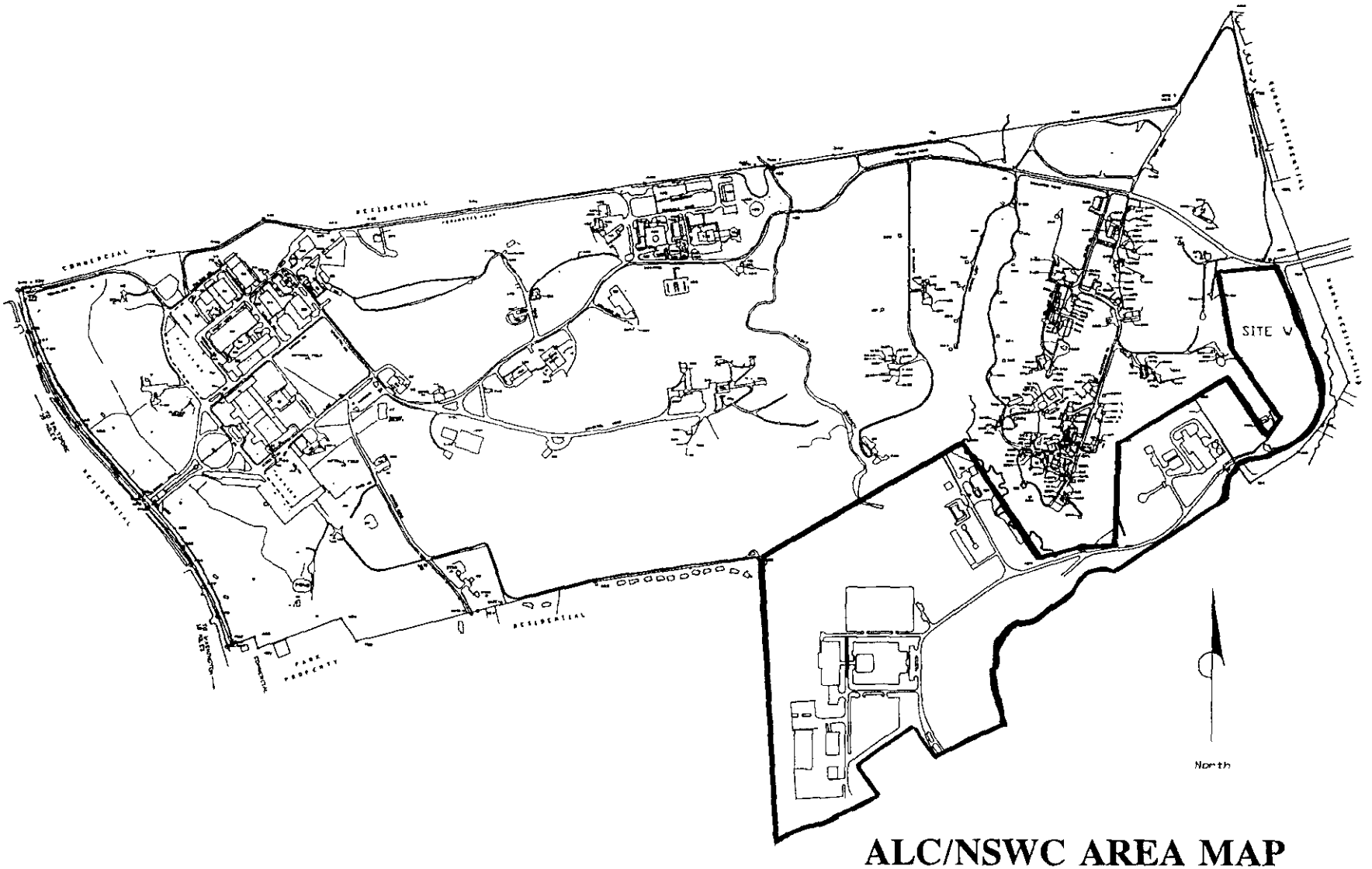
FEBRUARY 1996



US ARMY ENVIRONMENTAL HYGIENE AGENCY
WASTE DISPOSAL ENGINEERING DIVISION
ABERDEEN PROVING GROUND, MARYLAND

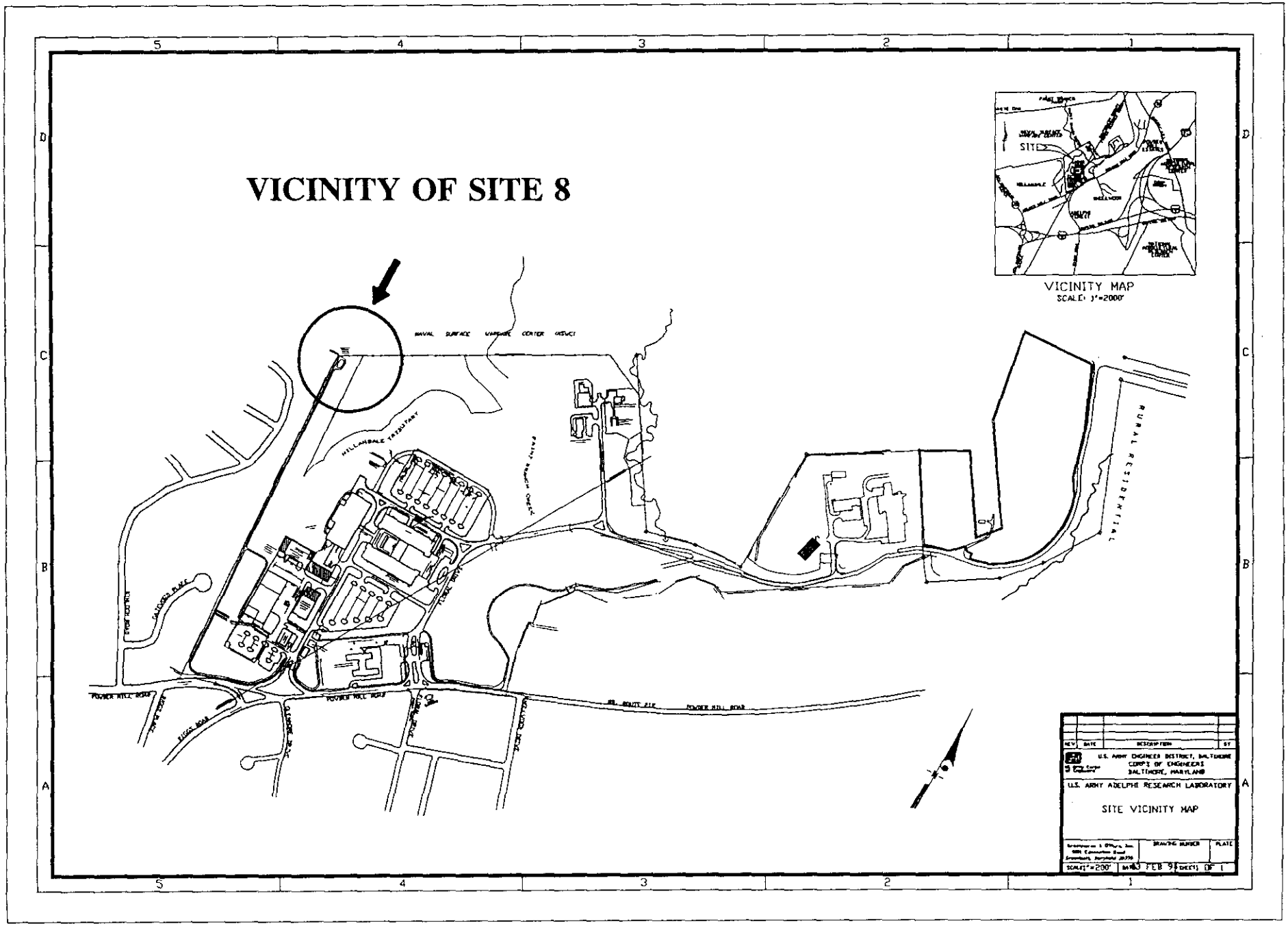
Figure 2
The Naval Surface Warfare Center
Adjacent to Adelphi Laboratory Center

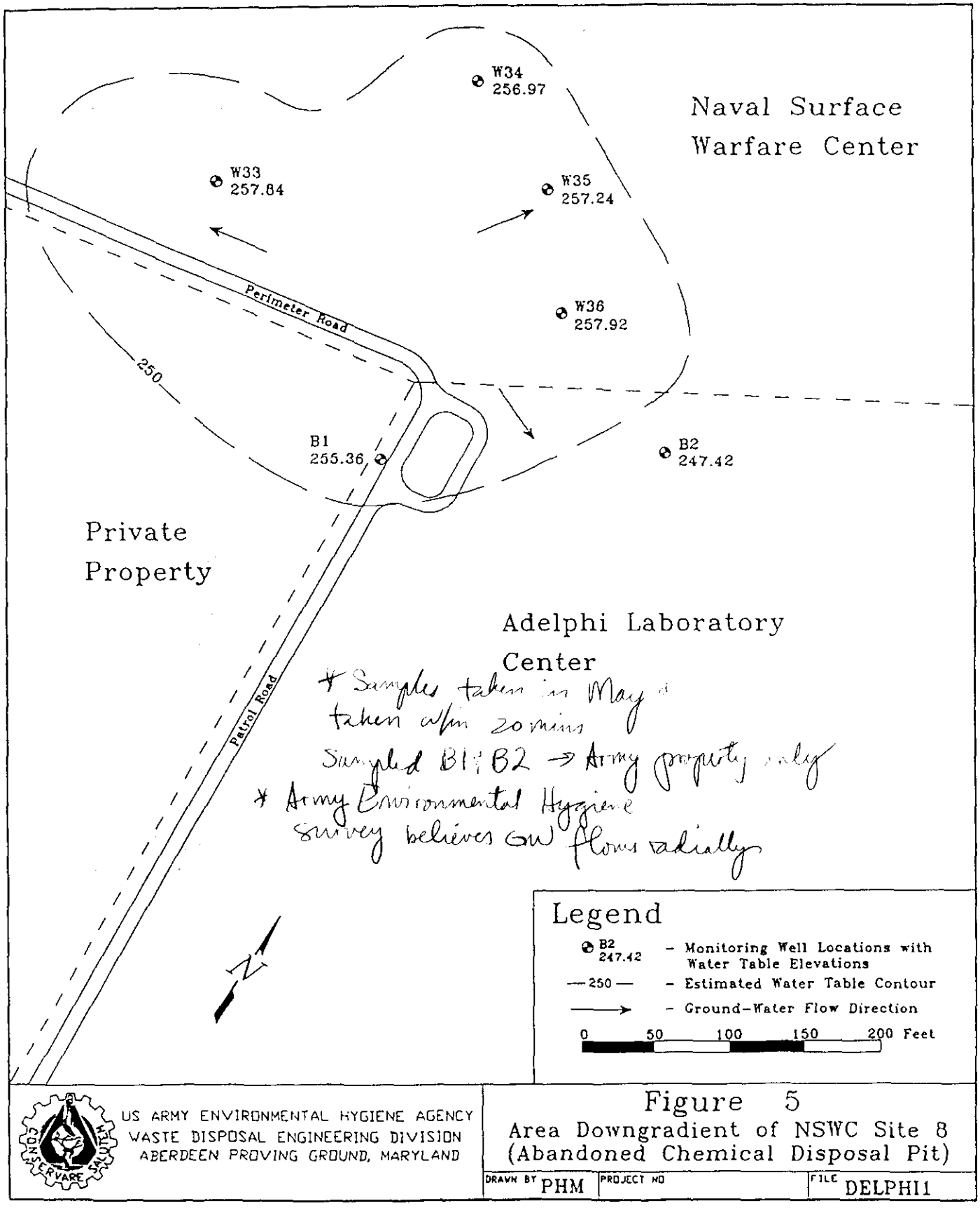
DRAWN BY	PROJECT NO	FILE
PHM	38-26-K106-94	DELPHI3



ALC/NSWC AREA MAP

VICINITY OF SITE 8





US ARMY ENVIRONMENTAL HYGIENE AGENCY
WASTE DISPOSAL ENGINEERING DIVISION
ABERDEEN PROVING GROUND, MARYLAND

Figure 5
Area Downgradient of NSWC Site 8
(Abandoned Chemical Disposal Pit)

DRAWN BY	PROJECT NO	FILE
PHM		DELPHI1

USACHPPM DATA SUMMARY TABLES
Vicinity of NSWC Site 8

Monitoring Well B-1
Groundwater Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)	Drinking Water Standards
Acetone	5 ppb	NS	None
1,1,2-Trichloroethane	2.0 ppb	NS	5 ppb
Phenol	23 ppb	NS	4,000 ppb
Bis(2-ethylhexyl)-phthlate	less than 10 ppb (See Note 2)	NS	None
Nickel	11.5 ppb	NS	100 ppb
Thallium	0.891 ppb	NS	2 ppb

Monitoring Well B-2
Groundwater Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)	Drinking Water Standards
Acetone	3 ppb	NS	None
1,1,2-Trichloroethane	less than 2.0 ppb	NS	5 ppb
Phenol	33 ppb	NS	4,000 ppb
Bis(2-ethylhexyl)-phthlate	210 ppb (See Note 2)	NS	None
Nickel	39.9 ppb	NS	100 ppb
Thallium	0.507 ppb	NS	2 ppb

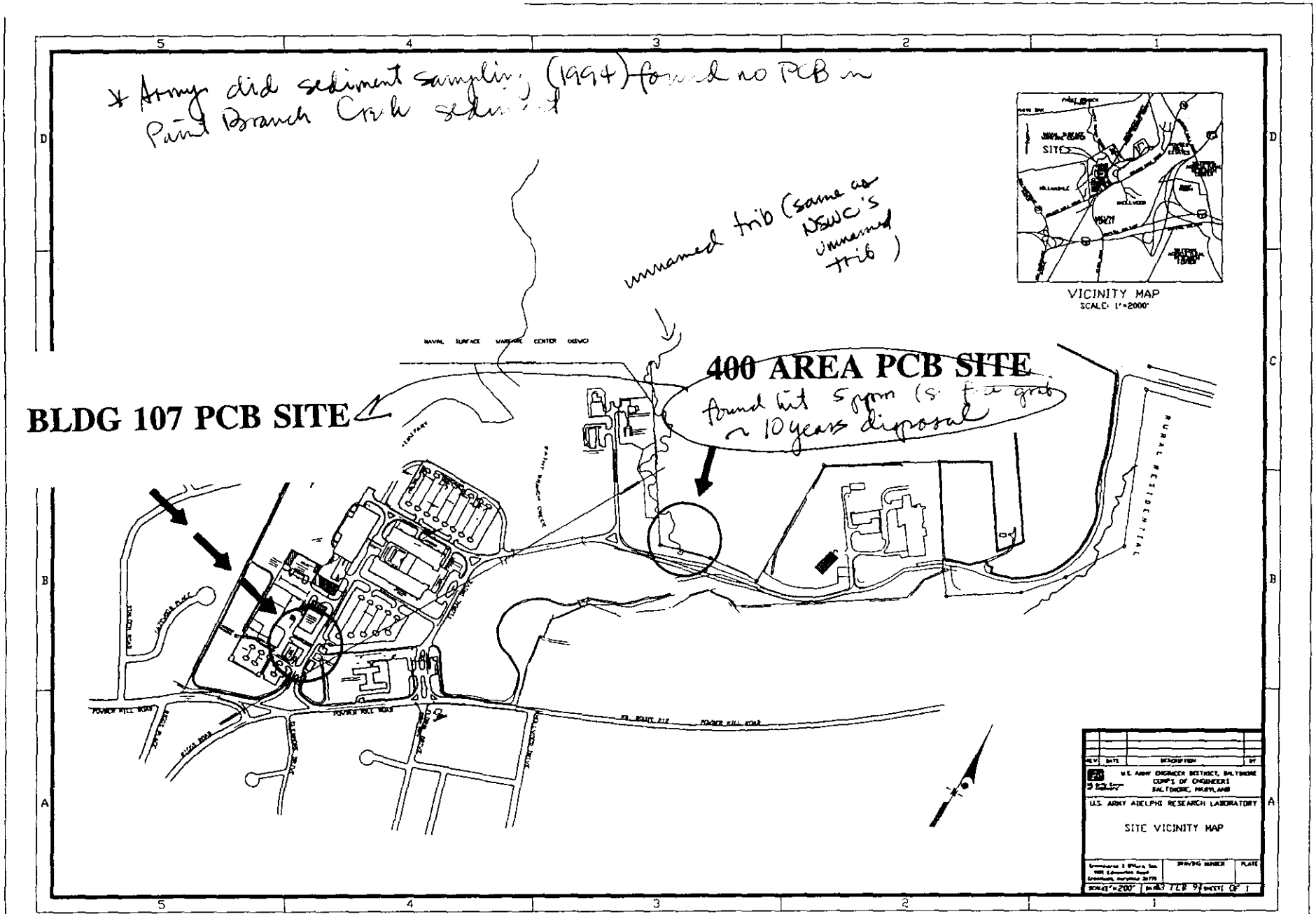
Key to units: ppb = micrograms per liter
NS = well not sampled at this time

Note 1: USACHPPM stands for "U.S. Army Center for Health Promotion and Preventive Medicine"

Note 2: This reported contaminant is suspected to be attributable to laboratory contamination.

* Draft WP for ALC due ~ April 1996

TWO PCB SITES



USACHPPM DATA SUMMARY
Two PCB Sites

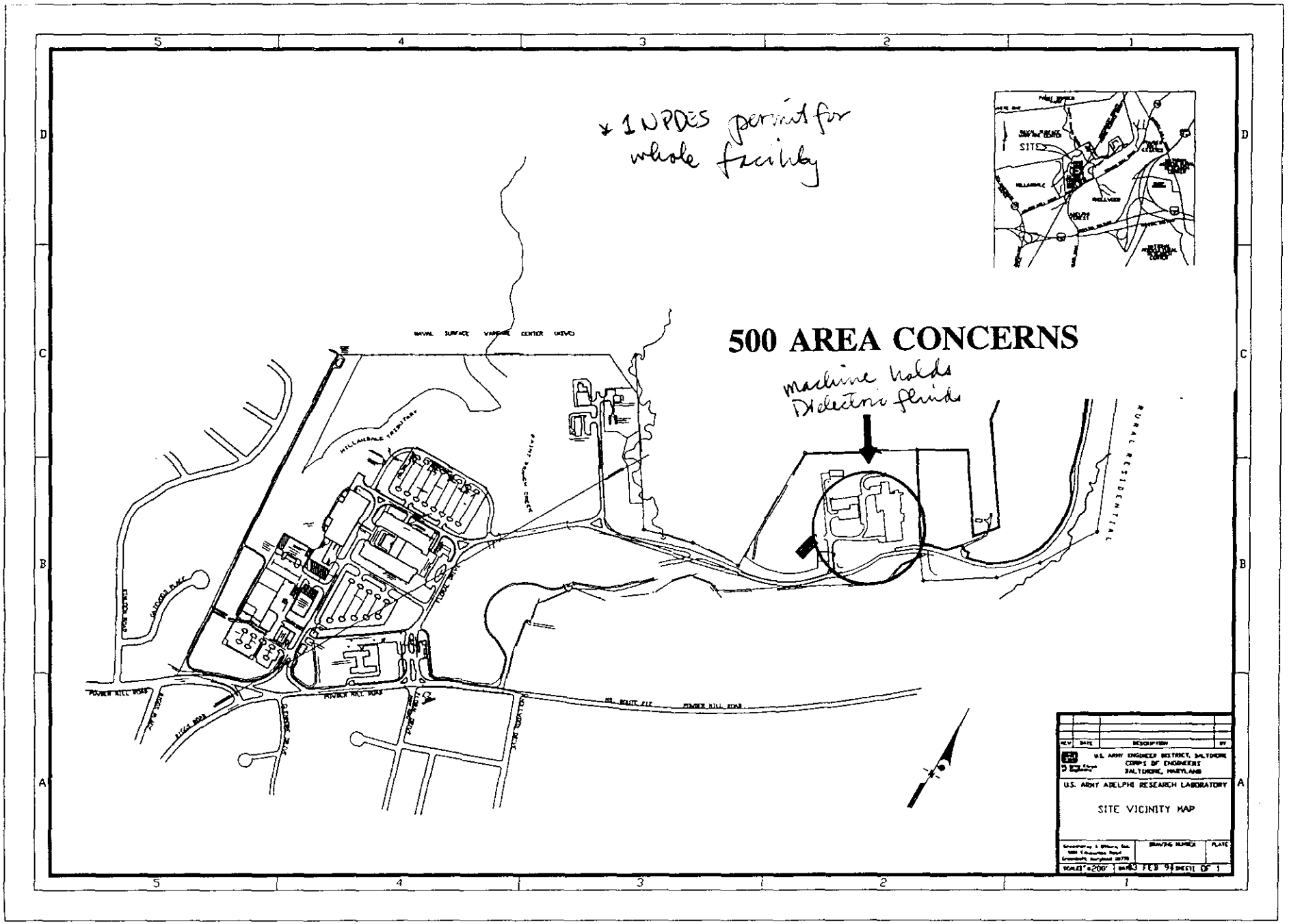
BUILDING 107 PCB SITE:

USACHPPM sampled this site in September 1994, and found PCB-1260 contamination in soil at a level of 4 micrograms per gram (i.e. 4 parts per million, or ppm).

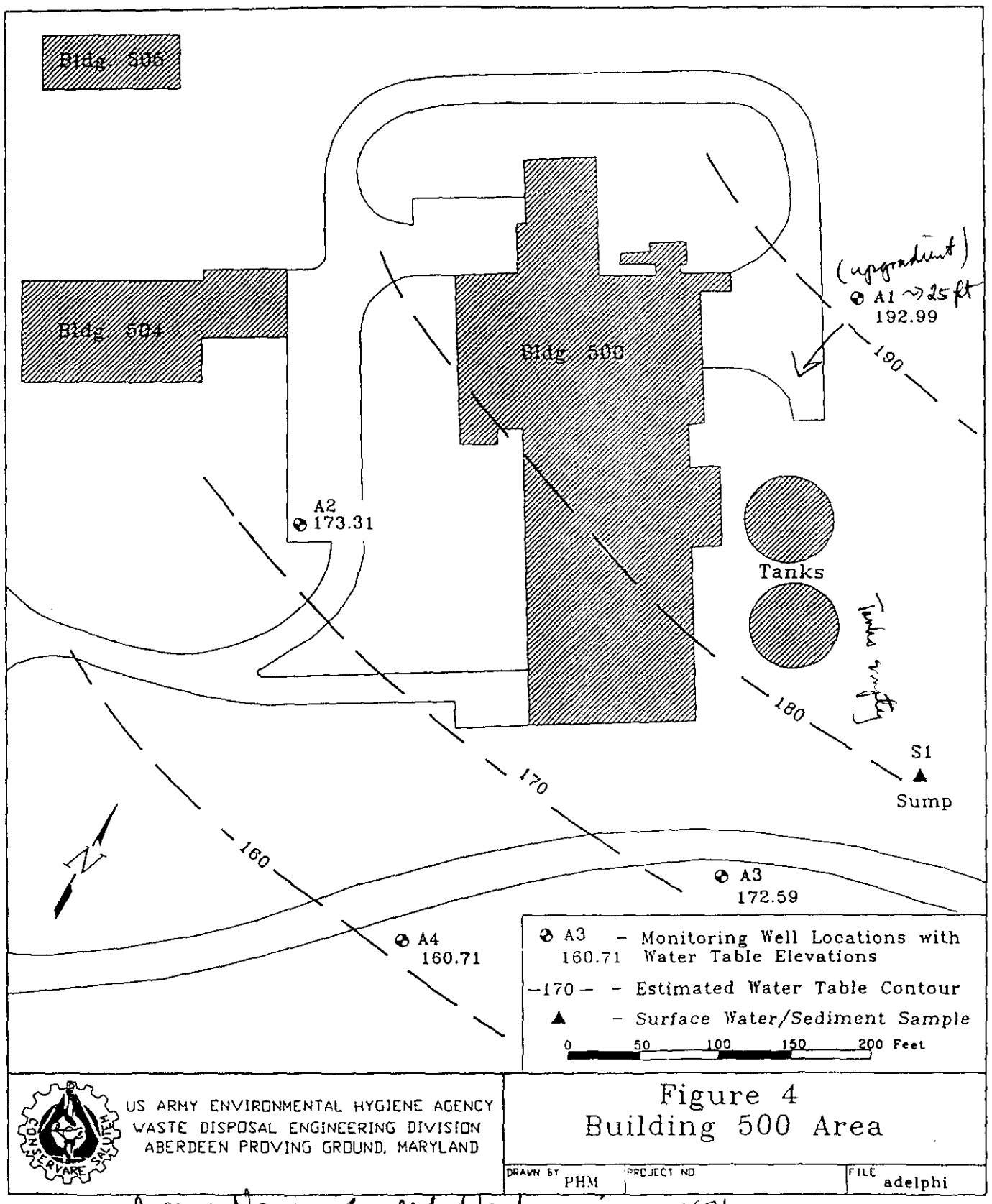
400 AREA PCB SITE:

USACHPPM sampled this site in May 1994, and found PCB-1254 contamination in sediment at a level of 3.87 micrograms per gram (ppm). When this site was resampled in September 1994, PCB's were not detected.

500 AREA CONCERNS → Site is funded



Site 9 (NSWC)



former Navy site, ceded to Army since 1971

* Irby's have DW well (~200 ft) problems
found diesel in Creek by home & "green" stuff

USACHPPM DATA SUMMARY TABLES
500 Area

Monitoring Well A-1
Groundwater Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)	Drinking Water Standards
Acetone	15 ppb	NA	None
2-Butanone	11 ppb	NA	None
4-Methyl-2-pentanone	18 ppb	NA	None
Trichloroethene	ND	5.4 ppb	5 ppb
Dichloromethane	NA	16 ppb	5 ppb
Dichlorodifluoro-methane	NA	ND	1,000 ppb
Phenol	NA	24 ppb	4,000 ppb
1,2,4-Trimethyl-benzene	NA	ND	None
Xylenes (o/m/p-xylene)	NA	ND	10 ppb
Bis(2-ethylhexyl)-phthlate	NA	ND	None
Nickel	61.3 ppb	57.4 ppb	100 ppb
Thallium	3.84 ppb	3.06 ppb	2 ppb
Total Petroleum Hydrocarbons	2.3 ppm (2,300 ppb)	2.3 ppm (2,300 ppb)	None

Key to units: ppb = micrograms per liter
ppm = milligrams per liter
NA = sample not analyzed for this parameter
ND = contaminant not detected

Monitoring Well A-2
Groundwater Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)	Drinking Water Standards
Acetone	24 ppb	NA	None
2-Butanone	7 ppb	NA	None
4-Methyl-2-pentanone	0.8 ppb (est.)	NA	None
Trichloroethene	6 ppb	12 ppb	5 ppb
Dichloromethane	NA	ND	5 ppb
Dichlorodifluoro-methane	NA	8.5 ppb	1,000 ppb
Phenol	NA	ND	4,000 ppb
1,2,4-Trimethyl-benzene	NA	ND	None
Xylenes (o/m/p-xylene)	NA	ND	10 ppb
Bis(2-ethylhexyl)-phthlate	NA	ND	None
Nickel	159 ppb	135 ppb	100 ppb
Thallium	1.92 ppb	0.966 ppb	2 ppb
Total Petroleum Hydrocarbons	0.45 ppm (450 ppb)	less than 0.2 ppm (200 ppb)	None

Key to units: ppb = micrograms per liter
ppm = milligrams per liter
NA = sample not analyzed for this parameter
ND = contaminant not detected

Monitoring Well A-3 ~ 20 ft
Groundwater Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)	Drinking Water Standards
Acetone	3 ppb (est.)	NA	None
2-Butanone	1 ppb (est.)	NA	None
4-Methyl-2-pentanone	ND	NA	None
Trichloroethene	2 ppb	ND	5 ppb
Dichloromethane	NA	ND	5 ppb
Dichlorodifluoro-methane	NA	ND	1,000 ppb
Phenol	NA	ND	4,000 ppb
1,2,4-Trimethyl-benzene	NA	3.4 ppb	None
Xylenes (o/m/p-xylene)	NA	6.5 ppb	10 ppb
Bis(2-ethylhexyl)-phthlate	NA	ND	None
Nickel	40.3 ppb	21.9 ppb	100 ppb
Thallium	1.41 ppb	0.585 ppb	2 ppb
Total Petroleum Hydrocarbons	0.41 ppm (410 ppb)	less than 0.2 ppm (200 ppb)	None

Key to units: ppb = micrograms per liter
ppm = milligrams per liter
NA = sample not analyzed for this parameter
ND = contaminant not detected

Monitoring Well A-4
Groundwater Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)	Drinking Water Standards
Acetone	3 ppb (est.)	NA	None
2-Butanone	1 ppb (est.)	NA	None
4-Methyl-2-pentanone	ND	NA	None
Trichloroethene	ND	ND	5 ppb
Dichloromethane	NA	ND	5 ppb
Dichlorodifluoro-methane	NA	ND	1,000 ppb
Phenol	NA	ND	4,000 ppb
1,2,4-Trimethyl-benzene	NA	ND	None
Xylenes (o/m/p-xylene)	NA	ND	10 ppb
Bis(2-ethylhexyl)-phthlate	NA	21 ppb	None
Nickel	15.8 ppb	6.96 ppb	100 ppb
Thallium	0.802 ppb	less than 0.500 ppb	2 ppb
Total Petroleum Hydrocarbons	0.57 ppm (570 ppb)	less than 0.2 ppm (200 ppb)	None

* [illegible] S [illegible] Lowry's well & did not [illegible] of Petro[illegible]

Key to units: ppb = micrograms per liter
ppm = milligrams per liter
NA = sample not analyzed for this parameter
ND = contaminant not detected

Stream Sample S-1
Surface Water Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)	Drinking Water Standards
2,4,6-Trinitro toluene (TNT)	0.81 ppb	NS	1.0 ppb
Royal Demolition Explosive (RDX)	4.3 ppb	NS	1.0 ppb
Total Petroleum Hydrocarbons	510 & 660 ppb (duplicates)	NS	None

Key to units: ppb = micrograms per liter
ppm = milligrams per liter
NS = Not Sampled

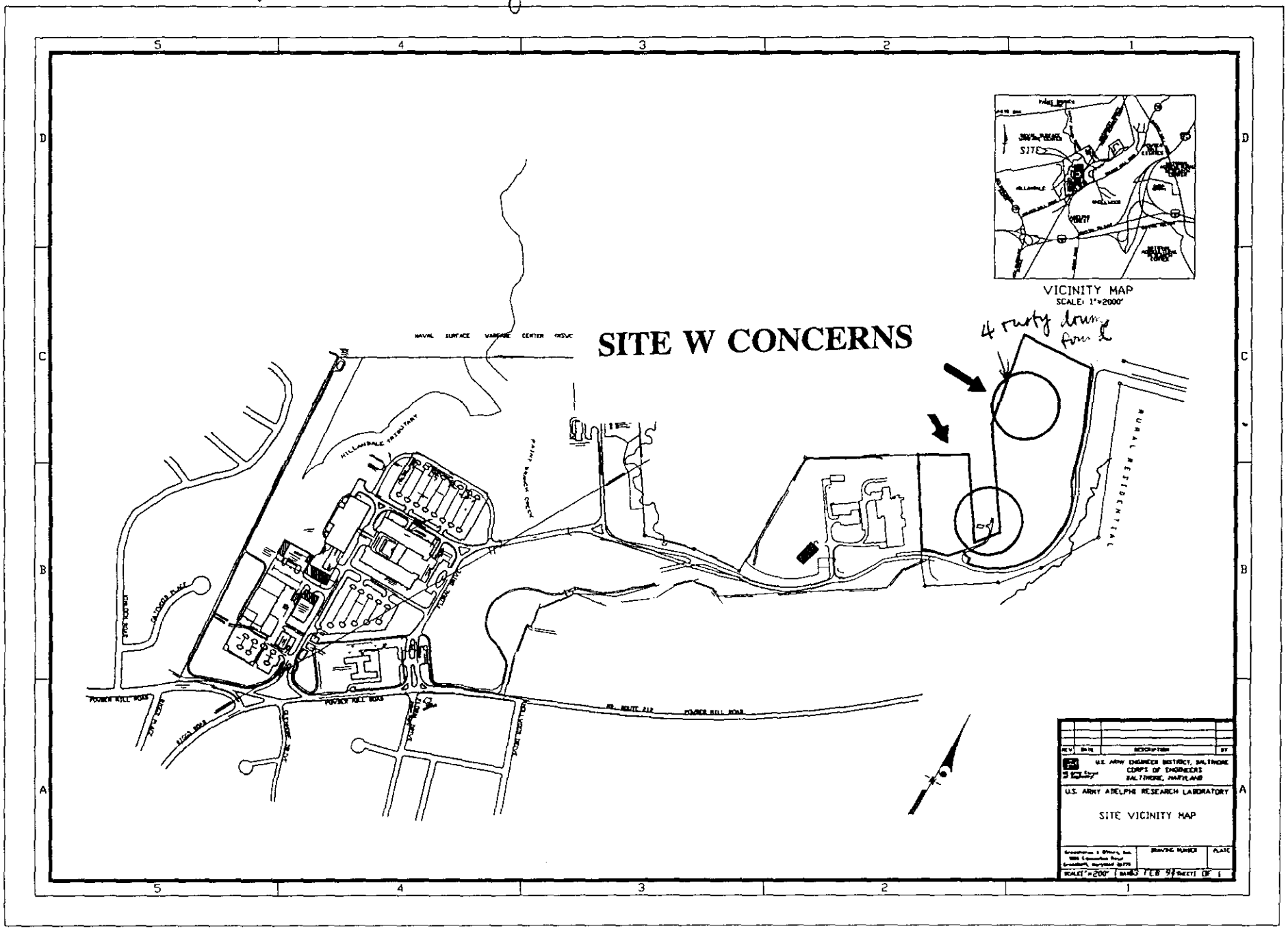
Stream Sample S-1
Sediment Contamination

Contaminant	Concentration (May 1994)	Concentration (September 1994)
2,4,6-TNT	ND	NS
RDX	ND	NS
Total Petroleum Hydrocarbons	360 ppm	NS

Key to units: ppm = milligrams per kilogram
ND = contaminant not detected
NS = Not Sampled

SITE W CONCERNS

↳ Army will be building as an Admin. Bldg.



DATA SUMMARY
SITE W CONCERNS

Building 700: In August 1995, the Corps of Engineers found "Heavy Oil" at a concentration of 1420 milligrams per kilogram (ppm) in a soil sample taken up-gradient from sampling point S-1. This soil sample was taken from a swale adjacent to (and on the west side of) the Navy's Building 700, in close proximity to the new Army/Navy property line located to the west of Building 700. A second sample taken on the east side of Building 700 revealed "Heavy Oil" at a concentration of 380 ppm.

Drum Disposal Site: In August 1995, the Corps of Engineers discovered a small drum disposal site in the northern half of Site W. Four rusted drums were found, with three being empty and one containing metal shavings.

The metal shavings were subjected to a TCLP Analysis, and were found to be contaminated with lead at a level of 17,900 milligrams per liter (ppm). "Heavy Oil" contamination was detected in soil beneath a second at a level of 44.8 milligrams per kilogram (ppm).

The Risk Management Division conducted a cleanup of the drum disposal site in September 1995. A post-cleanup investigation of the residual soil revealed that the drum disposal site is now free of hazardous waste constituents at levels above thresholds of regulatory concern. Surprisingly:

1) an upgradient soil sample taken for purposes of determining "background" revealed trace levels of pesticides, specifically finding:

DDE at 3.37 micrograms per kilogram (ppb)
DDT at 6.13 micrograms per kilogram (ppb)

2) PCB-1254 was detected in the soil at one of the drum sites at a level of 940 micrograms per kilogram (ppb)

+ Navy has sampled years ago for haz waste (not PCBs) non found

FUTURE ACTIONS BY ALC

1. Implement actions which will connect two adjacent residences (which are presently obtaining drinking water from private wells) to the local public water distribution system.

2. Conduct a CERCLA Remedial Investigation at ALC sites of concern. (Currently funded for an RI at the 500 Area, only.)

3. Continue to partner with the NSWC environmental staff, forgetting that there is a fence between the ALC and the NSWC.